Challenge TB–Botswana

Year 2
Quarterly Monitoring Report
January – March 2016

Submission date: April 29, 2016

Table of Contents

Cover photo:
World TB Day Commemoration March 2016: the Honorable Minister of Health of Botswana making key note speech at the World TB Day in Palapye District, Botswana (*credit:Mr.Kololo, NTP).*

This report was made possible through the support for Challenge TB provided by the United States Agency for International Development (USAID), under the terms of cooperative agreement number AID-OAA-A-14-00029.

1. Quarterly Overview

Country	Botswana
Lead Partner	KNCV Tuberculosis Foundation (KNCV)
Other partners	-
Work-plan timeframe	October 2015 – September 2016
Reporting period	January – March 2016

Most significant achievements:

1. Updating National TB Prevalence Survey Protocol

In 2011, Botswana developed a TB prevalence survey protocol with support from KNCV Tuberculosis Foundation (KNCV) under the USAID-funded project *TB CARE I*. At that time, funding could not be secured. Under the new funding model of the Global Fund, Botswana secured approximately two million USD incentive funding to conduct a national TB prevalence survey. Since 2011, new insights have emerged in methods on how best to conduct TB prevalence surveys like inclusion of new diagnostic tools such as GeneXpert (Xpert), digital data capturing, integration with HIV testing or other diseases, standardized analysis, etc. In addition, there have been important staff changes in the Botswana NTP program since 2011. Therefore there was a need to review the existing prevalence survey protocol and update it, so that it reflects the latest developments and insights with regards to the conduct of TB prevalence surveys globally while at the same time ensuring that it is in line with the existing country situation in terms of laboratory and radiological as well as human staff capacity.

A 3-day stakeholder's consultation workshop was organized (19th – 21st January 2016) to review and update the existing TB prevalence survey protocol. CTB provided technical support in organizing the workshop through the Senior KNCV Epidemiologist and in-country CTB team who helped in leading and facilitating the 3-days workshop. Based on the input from the workshop, CTB supported in revising the prevalence survey protocol and shared with the in-country TB prevalence survey core-team for further review and finalization. Two key issues with regards to the TB prevalence survey are:

1. Proposal to explore integration of the national TB prevalence survey with the Botswana AIDS Indicator survey (BAIS) without compromising methodology, sampling frameworks and power of both surveys.
2. Functional National TB reference laboratory (NTRL).

2. Implementation of new drugs and short MDR-TB treatment regimens in Botswana

An analysis of MDR-TB situation and readiness of NTP for implementation of new drugs and short MDR-TB treatment regimens was conducted during this quarter. A senior KNCV consultant facilitated a one-day national workshop on identification of priority actions for introduction of short regimens and new drugs for M/XDR-TB treatment. The consultant also visited the NTRL, two potential clinical pilot sites, central medical store and conducted a meeting with the National drug regulatory and pharmacovigilance experts.

The most important recommendation was the prerequisite to have a functional NTRL in terms of capacity to provide adequate culture and drug susceptibility testing (c/DST) services for the introduction of new drugs and shorter MDR-TB regimens.

3. GeneXpert Training-of-Trainers (ToT) workshop

Challenge TB (CTB) in collaboration with NTP and Cepheid supported a national GeneXpert ToT workshop. This workshop took place from the 29th -31st March 2016 in Gaborone, Botswana. The training included technical support details; how to solve issues relating to installation; systems logs and troubleshooting; results extrapolation; barcodes re-setting, daily weekly and monthly maintenance. Introduction of Cepheid's C360 as a monitoring tool for the technology; introduction on new ULTRA cartridges was also done. Therefore, within a 3-days centralized training Cepheid provided knowledge of how the GX system works and how basic issues can be resolved with preventive maintenance being a key part of this training. An introduction of a calibration kit was also done although NTP/NTRL is still waiting for the rest of the kits to come through. The focus throughout the training session was to assure a reduction of current possible errors/issues with

the GeneXpert system by emphasizing the importance of preventive maintenance, annual calibration and processing cartridges correctly to reduce the costs for the NTP.

In attendance were participants from the NTRL, NTP and MDR-TB treatment initiation sites19 participants (11F/8M). These participants are going to be in-charge of other training exercises in the future.

The NTP and NTRL team have also met with the Cepheid team from South Africa to discuss areas of collaboration. Cepheid has agreed to conduct a quarterly online maintenance/supervisory training for the GeneXpert users.

4. World TB Day Commemoration

CTB supported the commemoration of World TB Day 2016. The commemoration was hosted in Palapye district and officiated by the US Ambassador, H.E. Earl R. Miller, Minister of Health, Honorable Dorcus Makgatoand higher government officials. Many governmental, private, partner and civil society organizations attended the event. The CTB team supported the NTP during the preparations and the smooth running of the day of commemoration. The KNCV Technical Focal Point (TFP) of Botswana also attended the commemoration and was a recognized VIP at the ceremony. There was an active presence of the USAID Mission.

5. Technical supervision by the head-quarters' (HQ) TFP for CTB Botswana

KNCV's TFP for Botswana, Dr. Max Meis, visited Botswana during this quarter. The focus of his visit was to monitor the status of the implementation of Year 2 work-plan of the CTB project. The status of implementation of Year 2 activities was reviewed and some activities were rescheduled to quarter 3 and 4 of APA2. The TFP also met with NTP, NTRL, USAID Mission and other key in-country stakeholders and discussed the progress of CTB from their perspectives. The consultant also discussed recommendation to strengthen the collaboration with the KNCV country office.

The discussion included timely reprogramming of un-programmed funds/savings and possible savings and recommended next steps and suggestions for (ongoing & new) key activities in Year 3. The TFP and the CTB/KNCV country team also reviewed the current CTB project strategy, possible changes and the consequences of strategic direction adaptations for the activities in Year 3, 4 and 5 of the project, depending on the availability of COP funding.

Technical/administrative challenges and actions to overcome them

The NTRL, the only c/DST laboratory in the country, has been facing challenges with the provision of culture and drug susceptibility testing. The NTRL containment facility has not been functional for almost two years causing problems in the provision of c/DST services. Since there are currently no possibilities to confirm MDR-TB diagnosis and no possibilities to diagnose pre-XDR and XDR-TB patients, clinicians have been forced to make "uninformed" decisions and provide suboptimal care. This has greatly compromised the quality of patient care in the country.

With technical support from CTB, Ministry of Health (MOH) has contracted the services from Air Filter Maintenance Services (AFMS) a South Africa based company to install the new ventilation system at the NTRL containment facility. CTB has been requested to make a financial contribution to this refurbishment of the NTRL containment facility. With additional support from other partners completion of refurbishment is thought to be possible by July 2016.

Summary milestone data as of March 2016

Total # of milestones expected by Q2 (cumulative for Oct 15 - Mar 16)	Milestones **met** by Q2 (cumulative for Oct 15 - Mar 16)		Milestones **partially met** by Q2 (cumulative for Oct 15 - Mar 16)		Milestones **not met** by Q2 (cumulative for Oct 15 - Mar 16)	
N	#	%	#	%	#	%
21	11	52.4%	2	9.5	8	38.6%

2. Year 2 activity progress

Sub-objective 2. Comprehensive, high quality diagnostics								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-Mar 2016		
A) Perform an internal audit of the current C/DST and M/DST with recommendations for improvements to provide quality and efficiency in testing	A2.3.1	Report Audit results and provide recommendations	-	-	Annual Report on NRL lab cDST/mDST performance with quality indicators with status of 3 proposed sites for cDST implementation	No audit results until the end of this quarter as NTRL is not functional yet. Meanwhile, the NTRL has currently limited slots in the CDC Research Laboratory(Gaborone) to carry out some urgent routine work (appr. 20 samples per week) and proficiency test of samples Panels were received at the NTRL September 1, 2015 and analysis completed on November 30, 2015.	Not met	The NTRL containment facility was not functional for close to two years causing problems in the provision of (c/DST) services. AFMS, a South African based company, previously contracted by the NTRL and CDC Research Laboratory to service the biosafety cabinets of the NTRL and the ventilation system of the CDC Research Laboratory, has been selected and contracted by the MOH to install the new ventilation system at the NTRL containment facility. In addition to guidance of CTB Senior lab advisor based at NTRL, CTB is requested to make financial contribution to the refurbishment of the NTRL through reprogramming of approved funds. With additional support from other partners completion of refurbishment is thought to be possible by July 2016.

B) Support the lab through the current 2nd-line validation process	A2.3.1	Progress report on validation	-			Reported results: Fist Line phenotypic testing. Drugs Tested for phenotypic DST (MGIT) = 100% concordance Second line Phenotypic testing. Drugs included: KN, AM, CM, OFL and PZ on MGIT 960 = 100% concordance MDR TB plus LPA = 100% concordance	Met	Ongoing
C) Work to link the lab with the WHO SRL network for International proficienty testing	A2.3.1	Progress Report on linkage with SRL Antwerp	-	Progress Report on Proficiency Testing		A MoU has been established with SRL Uganda on the 20th February 2015. The first ever visit from the SNRL Uganda to NTRL Botswana was conducted during this quarter (22nd February to 4th March 2016).This visit was combined with the visit of the East, South and Central African (ECSA) health committee to NTRL and NTP.	Met	The current SRL is in Uganda based on WHO AFRO recommendations for labs to use regional SRL for regional supervision. The progress report on proficiency testing will be produced when the testing is complete.
D) Assess the feasibility of implementation of culture and DST testing at the 3 identified sites (Nyangabgwe, Letsholathebe and Ghanzi)	A2.3.1	Perform site visit to 1st (Nyangabgwe) of the proposed labs for c/DST implementation. Report on assessment and feasibility		NA		The visit to this site by the senior lab adviser and EQA officer from NTRL was supportive supervision to the microscopy and GeneXpert sites. Discussions also included preparations for the establishment of culture and DST services for the site. This venture is funded	Not met	The only additional site for C/DST envisaged for Botswana in the near future is the planned containerized lab for Francistown which will be implemented when the G F disbursement is received by MOH. 1st site (Nyangabgwe) was visited; 2nd (Letsholathebe) &3rd site (Ghanzi) are not

		for c/DST				by the GF and upon disbursement of the funding other works will continue: foundation work, tendering for procurement of CTL etc. Currently the single culture and DST facility in the country is located in Gaborone and mainly serves the southern part of the country while covering for the north as well. The Nyangagbwe site in Francis Town is the only feasible site.		relevant since the focus of MOH has shifted to strengthening the GeneXpert sites.
A) GeneXpert program assessment	A2.4.1	Completed assessment and Report 2014 GeneXpert Data	-			Initial data template developed by the in-country senior Lab Technical Adviser has been used to collect data for assessment on all 34 Xpert sites. GeneXpert Network assessment for GxAlert implementation has been completed though data from some labs is still missing.	Met	Data collection for GeneXpert assessment summary for GxAlert implementation has been done.
B) Technical advisory role to support National Xpert program activities on re-training, mentoring, M&E, and quality processes.	A2.4.1	Progress Report training, mentoring, utilization and quality performance of the National Xpert program	Progress Report training, mentoring, utilization and quality performance of the National Xpert program	Progress Report training, mentoring, utilization and quality performance of the National Xpert	Annual Summary of the National Xpert program performance utilization and impact.	Mentoring and supportive supervision to 3 Xpert and TB microscopy sites in Greater Francis town and Tutume districts has been conducted covering three health facilities. Xpert algorithm has been updated to roll-out the use of Xpert to all presumptive TB cases.	Partially met	All three GeneXpert sites visited have functional machines although with limited performance related to either modular failure, dust clogged filters or high temperature. Assistance from NTP and NTRL will continue to ensure the implementation of the revised Xpert algorithm in rolling out its

				program		National ToT on Xpert has been completed.		use to all presumptive TB cases.
C) GXAlert Preparation, implementation, evaluation	A2.4.1	Assessment for GX ALERT roll-out with proposal Delivered Start installation of GX ALERT (10/34 sites)	Continue installation (25/43 sites)	Final Install (34/ 34 sites) with Final Report from STTA.	External review by consultant of GXALERT roll-out with final report/ recommend ations	The Landscape analysis was conducted by Jeff Takle of Global Connectivity (GC) consultant in Quarter 1.The foreseen installation (25/43) in Quarter 2 has been delayed due to the development of the subcontract and Scope of Work (SOW) with GC and the reprogramming of existing funds for the planned activities.	Met	The national roll-out of GxAlert planned for the 2nd quarter of APA2 has been delayed due to the development of the subcontract and SOW with GC and the reprogramming of existing funds for the planned activities. Approval by USAID Washington and concurrence by the Mission for the sub-agreement and the reprogramming of funds was received) and the subcontract between KNCV and GC has been signed. The next visit of GC is rescheduled and confirmed for week 2 and 3 in May 2016.
A) Assessment of current system and identify baseline activities for all 34 Xpert sites	A2.6.1	Design assessment checklist and collect annual baseline data for all 34 sites Complete assessment on 34 sites and report			Annual Report on ST Systems and overall impact of mitigated solutions	Until the end of this quarter, the STA for laboratory services (Dr. Gladys Anyo is still waiting for information from sites to provide details on specimen referral for Botswana.	Not met	Some data elements missing for few Xpert sites will be completed before the planned mission of GC during the 2nd&3rd week of May as the data collection is still going on.
B) Identify alternative strategies with cost / sustainability evaluation	A2.6.1	Provide Recommend ations from assessment on mitigated		Establishin g system for sample transportat ion in one Xpert sites		During the recent visit of TFP, it was agreed to start this activity in Quarter 3 with one district (TBD) and to add another district in	Not met	This activity is refocused as establishing system for sample transportation to all Xpert sites, including turn-around-time monitoring system. Priority

		solutions per site (34)(if necessary)				Quarter 4. Focus will be on specimen transportation from peripheral sites to the Xpert sites (hubs). Taking into consideration the workload of the Senior Lab Advisor, the assessments and plans for the remaining 32 districts will be carried over to Year 3.		will be given to PEPFAR districts in selection of district for Q3 and Q4.
C) Implementation by District	A2.6.1		Progress Report on implementation process of mitigated solutions	Interim Report on implement ation process of mitigated solutions (per site/district)		This activity is not yet started. During the recent visit of TFP, it was agreed to start this activity in Quarter 3 with one district (TBD) and to add another district in Quarter 4. Focus will be on specimen transportation from peripheral sites to the Xpert sites (hubs). Taking into consideration the workload of the Senior Lab Advisor the assessments and plans for the remaining 32 districts will be carried over to Year 3.	Not met	The milestone is rescheduled to Quarter 3
D) M&E	A2.6.1		Devise M&E Tool to monitor ST Systems	Use M&E tool per 34 Xpert sites for ST Systems		During the recent visit of TFP, it was agreed to start this activity in Quarter 3 with one district (TBD) and to add another district in Quarter 4. Focus will be on specimen transportation from peripheral sites to the	Not met	The milestone is rescheduled to Quarter 3

						Xpert sites (hubs). Taking into consideration the workload of the Senior Lab Advisor the assessments and plans for the remaining 32 districts will be carried over to Year 3.		

National TB Reference Laboratory Refurbishment

The long standing challenge of the NTRL continued to this quarter. The containment facility- inside the only culture and DST lab in the country has not been functional for close to two years causing problems in the provision of c/DST. Cultures and DSTs – have not performed for close to two years forcing clinicians to make "uninformed" decisions and provide suboptimal care. Further, there is no possibility to diagnose pre-XDR and XDR-TB patients. This has greatly compromised the quality of patient care in the country.

Dr Max's (KNCV TFP) recent visit to NTRL and meeting with senior management of NTRL

Linkage of NTRL with Supranational Reference Lab Network of Uganda (SNRL Uganda)

An initial visit to NTRL from the East, South and Central African (ESCA) health committee took place from 22nd February to 4th March 2016. This visit was combined with a visit from the SNRL Uganda, which is now the recognized SRL for Botswana TB diagnostic activities as stipulated by WHO.

The ESCA has won a Global Fund grant to assist labs in the region to attain quality service delivery for testing and quality assurance. The Botswana NTRL is one of the laboratories to be included in this initiative. ESCA is using the SNRL Uganda as their reference lab for these activities. While the SNRL has commended the NTRL staff and management for the continuous competency processes ongoing in the lab, the recommendation is for the NTRL to become fully functional for the institution to benefit from the GF assistance through the ESCA.

ESCA / SNRL Uganda purpose/ objectives of the activity

As per the work plan approved by the project countries during the official launch of the project in Mauritius last year, countries shall receive an initial visit from ECSA and Uganda SRL. The objectives of the initial visit to Botswana were to;

1) Hold briefing meetings with the Permanent Secretary and other Senior Officials of the Ministry of Health.
2) Collect baseline Lab data based on the project approved performance framework through interviews/questionnaires.
3) Conduct lab baseline assessment using WHO SLIPTA checklist to establish the status of LQMS and areas of improvement.
4) Establish laboratory specific needs and draw Scope of Work (SoW) with specific timelines in relation to the performance framework;

Collect Baseline data on Knowledge Management at the National TB Program and the National TB Reference laboratory

The focus of the regional Global Fund support shall be in the following areas and more;

1. Review internal audit plan to aid efficiency of audits to capture as many non-conformances as possible
2. Preparation of panels for Gene Xpert EQA

3. General observation of Work, technical SOP's
4. Strengthen EQA for Microscopy using a decentralized approach which will significantly reduce the workload at NTRL
5. Conduct and document management reviews for the laboratory
6. Capacity building for Prevalence Surveys (PS) & Drug resistance Surveys (DRS)

Conclusion

The NTRL has basic infrastructure to support TB lab services. With the loss of accreditation and closure of the lab, the NTRL has to secure funding to revamp the lab and work towards regaining its accreditation status.

Follow-up actions for ECSA/ UGANDA SRL
The following follow up actions are crucial;

- Sustained political advocacy with MOH to maintain interest in the project
- Regular project updates to CCM and other national stakeholders
- Linkage into a knowledge Management Platform for the NTRL and NTP Managers

Linkage and collaboration with the WHO AFRO Global Laboratory Initiative for Africa (GLIA)

SNRL Uganda and ECSA team visit to NTRL and meeting with NTRL staff

GeneXpert Training of Trainers, Gaborone, Botswana

Sub-objective 3. Patient-centered care and treatment								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-Mar 2016		
A) Advisory capacity for routine training of MCH staff on clinical signs of TB, particularly failure to thrive, the current algorithm for screening children for TB, and recommendations for IPT	A3.1.1	Quarterly progress reports on training and improved activities in MCH clinics	Quarterly progress reports on training and improved activities in MCH clinics	Quarterly progress reports on training and improved activities in MCH clinics	Uptake/ Impact Report on screening for TB, Dx referrals from MCH clinics and IPT use in Children	A 3–day National workshop (14th – 18th December 2015) was organized by NTP to adapt the current WHO Pediatrics TB framework in order to align the country's guideline with the WHO standards. During that national workshop, there was active participation of child health unit of MoH and discussed to establish platform for collaboration between TB and Child Health to work together and incorporate clinical signs of TB in children into the existing child health training package.	Partially met	Follow up meeting will be with Child Health Unit of the Ministry of Health to incorporate clinical signs of Childhood TB in Child Health training package. Training of staff is planned for Q4.
A) Quarterly mentoring of NTP staff at the 5 MDR-TB treatment sites to include pharmacovigilance and and update of National guidelines for programmatic management of drug resistant TB	A3.2.1	Quarterly progress summary on MDRTB site visits (2nd site) to include relevant data on patients, treatment outcome, and Adverse event	Quarterly progress summary on MDRTB site visits (3rd site) to include relevant data on patients, treatment outcome, and Adverse event	Quarterly progress summary on MDRTB site visits (4th site) to include relevant data on patients, treatment outcome, and Adverse	Quarterly progress summary on MDRTB site visits (5th site) to include relevant data on patients, treatment outcome, and Adverse event	Mentoring and supportive supervision conducted in 4 out of the 5MDR-TB sites: Nyangagbwe Referral Hospital, Sekgoma Memorial Hospital Letsholathebe II Memorial Hospital and Ghanzi Primary Hospital.	Met	The mentoring visit was conducted by MDR-TB trained local staff (Dr Kgwaadira and Dr Kuate) with the technical and financial support from CTB. During the site visit to MDR-TB facilities, the officers also extended the supportive supervision to other facilities in the districts which are referring patients to MDR-TB sites.

(PMDT) in-line with new WHO recommendations		reporting	reporting	event reporting	reporting			The other PEPFAR partner (BUP) is also supporting the clinical mentoring of 2 MDR-TB sites (Gaborone and Francistown MDR-TB sites)
B) Technical Support for implementation of National Strategy under Global Fund	B3.2.1	Quarterly progress report on TA to GF grant implementation	Quarterly progress report on TA to GF grant implementation	Quarterly progress report on TA to GF grant implementation	Quarterly progress report on TA to GF grant implementation	CTB has been closely supporting the full cycle of Global Fund implementation from concept note development, development of implementation plan and grant making.	Met	The grant has been signed on the 1st of February 2016. Currently the NTP and GF team are preparing a detailed implementation plan. CTB will continue to actively participate in the GF TWG to closely monitor the development of Implementation Plan and subsequent implementation of the grant.
C) Technical support for the harmonization for community based program tools for ACF	C3.2.1	Quarterly progress report on TA to community based activities	Quarterly progress report on TA to community based	Quarterly progress report on TA to community based	Quarterly progress report on TA to community based	Due to delayed availability of the Global Fund, this activity has to be postponed to the next quarter (Q3)	Not met	This activity is not implemented and postponed to the next quarter (Q3) by NTP as it is planned under Global Fund and the funding disbursement has not yet started.

Sub-objective 4. Targeted screening for active TB								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-Mar 2016		
A) Advisory Role for the implementation of Contact Investigation (CI) approaches using the Community Health Workers (CHWs)	A4.1.1	Quarterly progress report on CI program using CHWs	Quarterly progress report on CI program using CHWs	Quarterly progress report on CI program using CHWs	Annual Report on impact of CI via CHW network	Contact investigation based on the revised WHO guideline and implementation manual is being piloted in one of the high burden TB districts (Ghanzi district). CTB has been providing technical support to NTP to develop some tools that are necessary in the implementation of contact investigation (namely index case interview and chart review form, and TB contact investigation form). The piloting will continue until April 2016. The findings from the pilot will help the country to develop standard operating procedures (SoP) for the nationwide implementation of the revised contact investigation. Full report is not yet available.	Partially met	Progress report from the pilot in Ghanzi is not yet available and will be shared during the next quarter. The result of the pilot will be used to develop national guideline.

Sub-objective 7. Political commitment and leadership								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-Mar 2016		
A) World TB Day Commemoration	A7.1.1		Disseminate key messages and brand CTB			CTB supported the commemoration of World TB Day 2016 which was hosted in Palapye district and officiated by the US Ambassador, H.E. Earl R. Miller, Minister of Health, Hon. Dorcus Makgato and high level government officials. Many government, private, partner and civil society organizations attended the event. The CTB team provided support during the preparations and smooth running of the day. The TFP of Botswana also attended and was a recognized VIP at the ceremony. There was an active presence of the USAID Mission. CTB disseminated key messages and the brand CTB using some promotional materials including the 120 Golf T-shirts for executives attending World TB Day 2016.	Met	

World TB Day Commemoration

H.E. The US Ambassador making key note address at World TB Day in Palapye

Sub-objective 8. Comprehensive partnerships and informed community involvement								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-Mar 2016		
A) STTA support for grant negotiations	A8.2.1	Mission report will be available				This activity is not carried out as the MoH decided to prepare the grant making process with in-country support and the STTA mission did not happen. However, the in-Country CTB team has supported the grant negotiation process and will continue to actively participate in the GF TWG to develop the implementation plan and monitor the implementation	**NA**	Initially the Ministry of Health preferred to get STTA for the development of implementation plan, which was planned for the 2nd week of April. But because of the very short notice, this is not possible to avail a consultant in such extremely short time. The in-Country CTB team will continue to actively participate in the GF TWG to develop the implementation plan and monitor the implementation. Hence no more STTA needed and the 10,173 USD planned STTA will be reprogrammed accordingly to support other priority activities to be identified in consultation with NTP and other stakeholders.

Sub-objective 9. Drug and commodity management systems								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-Mar 2016		
BDQ and Pharmacovigilance	9.2.1		STTA Mission Report on BDQ Registration and PV Training			Dr Gunta Dravniece, Senior KNCV Consultant provided TA for this activity during the 2nd quarter. Analysis of MDR-TB situation and readiness of NTP for implementation of new drugs and short MDR-TB treatment regimens was conducted. The consultant also facilitated one-day national workshop on identification of priority actions for introduction of short regimens for the treatment of drug-resistant tuberculosis (M/XDR-TB) and new drugs for M/XDR-TB treatment; she visited the NTRL, two potential clinical pilot sites, central medical store and conducted a meeting with the National drug regulatory and pharmacovigilance experts. NTP, NTRL, Drug Regulatory Unit (DRU), NASCOT and BEDAP participated in a work-shop and have been nominated to be part of	Met	The most important recommendation was the prerequisite to have a functional NTRL in terms of its capacity to provide adequate c/DST services for the introduction of new drugs and shorter MDR-TB regimens. As highlighted under activity 2.3.1 above, efforts are underway to fix the NTRL. CTB has made financial contribution for the refurbishment and completion of refurbishment is thought to be possible by July 2016.

						the national Technical Working Group for Pharmacovigilance (PV), active drug safety monitoring and management (aDSM).		

Implementation of new drugs and short MDR-TB treatment regimens in Botswana

Stakeholders' consultation workshop on short regimens and new drugs

The key findings with regards to the introduction of new drugs and short MDR-TB treatment regimens in Botswana:

- System is in place.
- Very dedicated and knowledgeable staff.
- Strong political commitment.
- Access to second line drugs.
- NTP is willing to change the policy and practice based on latest evidence.

The key challenges are:

- Lack of functional culture and DST laboratory is the main barrier.
- Weak linkages between laboratory technicians and clinicians.
- Limited understanding of laboratory aspects by clinical experts and limited understanding of clinical aspects by laboratory experts.
- Laboratory registers not linked with TB registers, sample (and not patient) based analysis, estimations.

The most important recommendation was the prerequisite to have a functional NTRL in terms of its capacity to provide adequate c/DST services for the introduction of new drugs and shorter MDR-TB regimens. Efforts should be combined to make NTRL functional.

A key stakeholder consultation meeting on regulatory procedures for importation, registration, safety and efficacy monitoring of new drugs was also conducted during this quarter. NTP, NTRL, Drug Regulatory Unit (DRU), NASCOT and BEDAP participated in the work shop and have been nominated to be part of the national Technical Working Group for Pharmacovigilance (PV), active drug safety monitoring and management (aDSM).

Meeting with National PV and drug regulatory experts of the MOH

Sub-objective 10. Quality data, surveillance and M&E								
Planned Key Activities for the Current Year	Activity #	Planned Milestones				Milestone status	Milestone met? (Met, partially, not met)	Remarks *(reason for not meeting milestone, actions to address challenges, etc.)*
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Year end	Oct 2015-Mar 2016		
Assessment on connectivity and data systems with proposal for linking systems	A10.1.1	Assessment report with Proposed activities and cost for interfacing systems. With timeline and strategic plan				The landscape analysis was conducted by Jeff Takle of GC in first quarter. During the second quarter development of the subcontract and SoW with GC and the reprogramming of existing funds for the planned activities has been completed.	Met	The subcontract between KNCV and GC has been signed. The subcontract lists ongoing activities for year 3 – 5 depending on availability of funding from USAID. The next visit of GC team is rescheduled and confirmed for the 2nd and 3rd week of May.
Update the national survey protocol in-line with the current WHO guidelines and field experiences in implementing TB prevalence survey in other countries. Development of survey tools and training of staff in preparation for the TB prevalence survey implementation. Monitor and supportive supervision during the implementation of the survey.	A10.2.1	Updated survey protocol				Technical assistance to MoH to revise the protocol from 2011 according to the global guidance of WHO has been provided during quarter 2 by Dr Klinkenberg, KNCV consultant. A 3-day stakeholder's consultation workshop was organized to review and update the existing TB prevalence survey protocol. Based on the input from the workshop, the prevalence survey protocol has been revised and shared with the in-country TB prevalence survey core-team for further review and finalization	Met	The two key issues with regards to the TB prevalence survey are: Proposal to explore integration of the national TB prevalence survey with the Botswana AIDS Indicator survey (BAIS) without compromising methodology, sampling frameworks and power of both surveys; and functional NTRL

Updating National TB Prevalence Survey Protocol

The first TB prevalence survey protocol for Botswana was developed in 2011 with support from KNCV under the USAID-funded project *TB CARE I*. Under the new funding model of the Global Fund, Botswana secured about two million USD incentive funding to conduct a national TB prevalence survey. Since 2011, new insights have emerged in methods and how best to conduct TB prevalence surveys such as the inclusion of new diagnostic tools like GeneXpert, digital data capturing, integration with HIV testing or other diseases, standardized analysis etc. In addition, there have been important staff changes in the Botswana NTP program since 2011. Therefore there was a need to review the existing protocol and update it so it reflects the latest developments and insight in the conduct of TB prevalence surveys globally while at the same time it is in line with the existing country situation in terms of laboratory and radiological as well as human staff capacity.

A 3-day stakeholder's consultation workshop was organized (19th – 21st January 2016) to review and update the existing TB prevalence survey protocol. The workshop was attended by 24 participants (10F/14M). Key in-country partners and stakeholders (NTP, NTRL, NACA, WHO, CDC, KNCV/CTB, I-TECH, BUP, University of Botswana, and Radiology Department) were represented. Technical assistance was provided by Dr Eveline Klinkenberg, Senior Epidemiologist at KNCV who also provided TA in the development of 2011 protocol. Based on the input from the workshop, the prevalence survey protocol has been revised and shared with the in-country TB prevalence survey core-team for further review and finalization.

Two key issues with regards to the TB prevalence survey are:

1. Proposal to explore integration of the national TB prevalence survey with the Botswana AIDS Indicator survey (BAIS) without compromising methodology, sampling frameworks and power of both surveys. Further discussion is ongoing on the technical details and feasibility of the integration of both surveys. Based on that discussion, the MOH will decide whether or not to combine the two surveys. Of note, an integrated AIDS and TB survey has never been conducted elsewhere and the planned TB Prevalence survey will be the first ever for Botswana. There is uncertainty on when the BAIS will take place. The BAIS may be planned for 2018. The TB Prevalence Survey has to start in 2016 and to end in 2017 as it will be funded by the GF. Technical discussion on the differences in methodology, sampling frameworks and power of both surveys are being held by experts from BAIS and TB prevalence survey. Based on the outcomes of these discussions, the MOH will decide whether or not to combine both surveys.

2. Functional National TB reference laboratory (NTRL): For the last two years the NTRL has been closed. The TB prevalence survey - for which the NTRL is a backbone - could potentially help to facilitate the re-opening. It should also be ensured that there is sufficient capacity to handle all anticipated samples from routine and survey work.

Meeting with the Director of Public Health Department of MoH during debriefing of Dr Eveline's mission.

National Stakeholders consultation workshop to update TB prevalence survey

3. Challenge TB's support to Global Fund implementation in Y2

Current Global Fund TB Grants

Name of grant & principal recipient *(i.e., TB NFM - MoH)*	**Average Rating***	**Current Rating**	**Total Approved Amount**	**Total Disbursed to Date**	**Total expensed** *(if available)*
TB/HIV NFM – NACA/MoH & ACHAP	NA	NA	* USD27,043,807	NA	NA
TB-Grant – MoH	B1	B2	**USD 8,952,178	USD 8,522,651	

** TB/HIV NFM has been approved and the grant signing is expected in November 2015*
*** TB Grant covered period: 2007 – 2013*

In-country Global Fund status - key updates, current conditions, challenges and bottlenecks

CTB has been closely supporting the full cycle of Global Fund grant making from concept note development, country dialogue, addressing technical review panel comments, grant negotiation, development of implementation plan and preparation for grant signing. Botswana has been granted USD27,043,807 for a joint TB/HIV concept note. The grant signing was done on the 1st of February 2016.

One key activity supported during this quarter was developing a Global Fund procurement list to ensure procurement arrangements are finalised and fulfil the Global Fund requirements. CTB will continue to closely support the MoH with regards to full implementation cycle of the grant, following and contributing (primarily through technical assistance) to its timely implementation and ensuring implementation with maximum impact.

One activity planned for Quarter 1 of Y2 work-plan was to hire an external CTB consultant who would assist in the grant negotiation during Quarter 1. However the MOH indicated that grant negotiation can be done by in-country team and rather preferred technical assistance during Global Fund implementation. There is urgency from the Global Fund country team to develop a detailed implementation plan covering the whole life time of GF grant. The GF team has requested CTB for a technical consultant in developing the work plan and for the consultant to be available on the 15th April 2016. Because of such short notice, it was not possible to avail an appropriate external consultant. The NTP and Global Fund team are organizing a workshop between the 14th and 15th April 2016 to develop the implementation plan, which the two in-country senior technical advisors from CTB will actively support.

4. Success Stories – Planning and Development

Planned success story title:	Implementation of Data Connectivity for Patient Management Through Integrated Technologies: National implementation and roll-out of GxAlertin Botswana
Sub-objective of story:	2. Comprehensive, high quality diagnostics
Intervention area of story:	2.4. Access, operation and utilization of rapid diagnostics (i.e. Xpert) ensured for priority populations
Brief description of story idea:	Xpert MTB/RIF has been rolled out to 34 health facilities in Botswana (there are 28 health districts and each district has atleast one GeneXpert machine). It was rolled out with strong political commitement and wasverysuccesssful and can potentially make significant contribution to improving the diagnosis and care of TB patients in the country. However, there is a huge challenge in issues related to M&E. No data capturing mechanism is established and the manual collection of data doesnot working well. It takes weeks and months to reach the national level, incomplete and inaccurate reporting with lots of uncertaininities. In order to improve this situation, CTB - in collaboration with NTP - is introducing a remote monitoring system (GxAlert). Through the implementation of GxAlert the onsite GeneXpert test result could be available in 5 – 15 seconds after testing, data can replicate and move, patients can be put on treatment faster, and fewer stock outs and cartridge expiry are expected.

Status update: The landscape analysis was part of the APA1 work plan, but was conducted in Quarter 1 of APA2. A consultant from GC (Jeff Takle) visited the country to meet with major stakeholders and made a proper evaluation of the TB information system policy, software readiness, and infrastructure in place. The landscape is quite favorable to a national GxAlert implementation. A clear national TB strategy underpins these systems and provides clarity for where GxAlert can add value along the patient continuum of care. The installation of the GxAlert was planned for Quarter 2 but has been delayed due to the development of the subcontract and SOW with GC and the reprogramming of existing funds for the planned activities.

The sub-contract between KNCV and GC has been signed, which lists ongoing activities for Year 3 – 5 depending on availability of funds available from USAID. The next visit of Jeff Takle and his team is rescheduled for Quarter 3 and confirmed for week 2 &3 of May 2016.The key planned activities during this visit are:

- Provide final equipment preparation for the national GxAlert rollout to include router receipt from customs, configuration, setup of SIM cards and data plans, and in-country testing.
- Conduct in-country TOT and workshops on Data Collection with GxAlert, development of a Data Control and Privacy plan, Systems Administration training for GxAlert, and installation & rollout training.
- Conduct 5-10 in-country installations as a group to ensure the in-country team has sufficient knowledge and capability to complete the national rollout.
- Brief stakeholders and improve support pre- and post-implementation of GxAlert to ensure that not only the network functions, but the data it generates is used adequately.

5. Quarterly reporting on key mandatory indicators

Table 5.1 MDR-TB cases detected and initiating second line treatment in country (national data)

Quarter	Number of RR-TB or MDR-TB cases detected (3.1.4)	Number of MDR-TB cases initiating second-line treatment (3.2.4)	Comments:
Total 2011	46	71	In 2012, the number of patient started on treatment is higher than number of MDR-TB detected because some patients are started on treatment as MDR-TB suspects (empirically) without laboratory confirmation. All cases were not c/DST confirmed due to seizing operation by NTRL since October 2014.
Total 2012	52	67	
Total 2013	59	59	
Total 2014	85	85	
Total 2015	82	82	
Jan-Mar 2016	Data not available	Data not available	
Apr-Jun 2016			
Jul-Aug 2016			
To date in 2016			

Table 5.2 Number of pre-/XDR-TB cases started on bedaquiline (BDQ) or delamanid (DLM)(national data)

Quarter	Number of pre-/XDR-TB cases started on BDQ nationwide	Number of pre-/XDR-TB cases started on DLM nationwide	Comments:
Total 2014	2	0	Four patients have been started on Bedaquiline in the country so far (2014 & 2015). They were treated with Bedaquiline on compassionate use. Preparation is underway for formal introduction of Bedaquiline and expected in Q4 of APA2
Total 2015	2	0	
Jan-Mar 2016	0	0	
Apr-Jun 2016			
Jul-Aug 2016			
To date in 2016			

Table 5.3 Number and percent of cases notified by setting (i.e. private sector, prisons, etc.) and/or population (i.e. gender, children, miners, urban slums, etc.) and/or case finding approach (CI/ACF/ICF) (3.1.1)

		Reporting period					Comments
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Jul-Sept 2016	Cumulative Year 2	
Overall CTB geographic areas	TB cases (all forms) notified per CTB geographic area*(List each CTB area below - i.e. Province name)*						National – Challenge TB is supporting at national level and no specific population as such as target.
	TB cases (all forms) notified for all CTB areas						
	All TB cases (all forms) notified nationwide (denominator)	Data not yet available	Data not yet available				
	% of national cases notified in CTB geographic areas						
Intervention (setting/population/approach)							
Choose an item.	CTB geographic focus for this intervention						Not applicable. CTB is not currently supporting any of these interventions
	TB cases (all forms) notified from this intervention						
	All TB cases notified in this CTB area (denominator)						
	% of cases notified from this intervention						
Choose an item.	CTB geographic focus for this intervention						
	TB cases (all forms) notified from this intervention						
	All TB cases notified in this CTB area (denominator)						
	% of cases notified from this intervention						
Choose an item.	CTB geographic focus for this intervention						
	TB cases (all forms) notified from this intervention						
	All TB cases notified in this CTB area (denominator)						
	% of cases notified from this intervention						

6. Challenge TB-supported international visits (technical and management-related trips)

#	Partner	Name of consultant	Planned quarter				Specific mission objectives	Status (cancelled, pending, completed)	Dates completed	Duration of visit (# of days)	Additional Remarks (Optional)
			Q 1	Q 2	Q 3	Q4					
1	KNCV	Jeff Takle	X				Conduct landscape analysis for GxAlert implementation with cost analysis and projected time required for national rollout	Complete	09/10/2015	5 days	This activity was planned as part of AP1, but was conducted during the first quarter of APA2
2	KNCV	Kathleen England	X				Laboratory Supervision, mentoring and network review	Complete	31/10/2015	5 days	
3	KNCV	Dianne van Oosterhout	X				Managerial and administrative support in the implementation of Challenge TB Project	Complete	02/12/2015	2 days	
4	KNCV	Eveline Klinkenberg		X			Review the existing prevalence survey protocol (developed in 2011) and conduct a workshop with the anticipated steering committee for the survey to agree on needed adaptations for the protocol in order for it to reflect the latest developments in methods and organization of prevalence surveys	Complete	22/01/2016	5 days	
5	KNCV	Gunta Dravniece		X			To enable the phased introduction of new drugs for MDR and XDR-TB treatment in Botswana	Complete	18/02/2016	7 days	
6	KNCV	Max Meis		X			As country Technical Focal point, provide	Complete	25/03/2016	7 days	

							technical assistance to the country office and NTP in the implementation of CTB				
7	KNCV	Jeff Takle + 2 staff from GC			X		GxAlert Implementation: Training, Installation and QA	Pending			Planned to happen in Q3 (May 2016)
8	KNCV	Max Meis				X	CTB APA3 work plan development	Pending			Planned to happen as per the schedule
9	KNCV	Mar Koetse				X	CTB financial support visit	Pending			Planned to happen as per the schedule
10	KNCV	External consultant TBD					STTA support for GF grant implementation	Cancelled			Funds will be re-allocated to support the participation of Dr Gladys Anyo and NTRL manager in the lab workshop in The Hague
11	KNCV	Nico Kalisvaart					"A) Xpert program assessment B) Technical advisory role to support National Xpert program activities on re-training, mentoring, M&E, and quality processes. C) GXAlert Preparation, implementation, evaluation"	Cancelled			Consultant will provide distant support
12	KNCV	Gunta Dravniece					BDQ and Pharmacovigilance	Cancelled			
13	KNCV	Eveline Klinkenberg					BDQ and Pharmacovigilance	Cancelled			
14	KNCV	Eveline Klinkenberg					Review of the existing prevalence survey protocol	Cancelled			
Total number of visits conducted (cumulative for fiscal year)								6			
Total number of visits planned in approved work plan								14			
Percent of planned international consultant visits conducted								42%			

Sub-objective:	2.Comprehensive, high quality diagnostics					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
2.3.1. Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result.	New/Retreatment	Every six months	Baseline data 2014 collected from NTRL in Q4-APA1. (This data is not available) 28% (896/3,176)- this baseline is set based on 2013 data as full data for 2014 is not yet available	45%	Data not available	No culture and DST has been carried out by NTRL in the last quarter and hence data on % of confirmed TB patients with DST is not available at the moment. Also, there is no currently existing system of GeneXpert data collection and we can only expect this data to be available once the GxAlert is in place and functional.
I2.4.6. #/% of new TB and Rif-resistant patients diagnosed using GeneXpert	TB and RR-TB (as GXAlert rolls out we will add HIV, <15 age , and more)	Quarterly	Baseline data 2014 collected from NTRL in Q4-APA1(This data is not available)	TBD after the baseline	Data not available	There is no currently existing system of GeneXpert data collection and we can only expect this data to be available once the GxAlert is in place and functional.
I2.6.5 #/% of TB patients detected through a specimen transport system	New/RT/HIV	Quarterly	Baseline data 2014 collected from NTRL in Q4-APA1	Increase by 10% compared to baseline TBD	Data not available	Specimen transport system cannot be assessed as the NTRL is still non-functional. For the GeneXpert, specimen referral cannot be assessed at NTRL level. It is hoped that data related to GeneXpert will be available after rollout of GxAlert

Sub-objective:	3. Patient-centered care and treatment					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I3.1.4. # of MDR-TB patients diagnosed	New/RT	Quarterly	108	150	24 (16%)	This result is for Oct-Dec 2015. Data for January – March 2016 is not yet available.
I3.2.4. #/% of eligible patients with drug-resistant TB enrolled on second-line treatment (disaggregated by sex, age and urban/rural)	As stated	Quarterly	Baseline data 2014 collected from NTP in Q4-APA1	150 (100%)	24 (16%)	This result is for Oct-Dec 2015. Data for January – March 2016 is not yet available.
I3.2.7. Treatment success rate for MDR-TB patients on treatment	As stated	Annually	60%	70%	Measured annually	
I3.2.12. % of HIV-positive registered TB patients given or continued on anti-retroviral therapy during TB treatment	Gender	Quarterly	72%	80%	75% (2,882/3,843)	This is the annual data from the end of APA1. Data for Quarter 1 and Quarter 2 of APA2 is still not available. It is expected to be available in Quarter 3 and will be shared by then.
I3.2.22. #/% of TB patients followed by community-based workers/volunteers during at least the intensive phase of treatment	Gender/ Urban/Rural	Quarterly	65%	70%	76% (4,780/6,290)	This is the annual data from the end of APA1. Data for Quarter 1 and Quarter 2 of APA2 is still not available., It is expected to be available in Quarter 3 and will be shared by then

Sub-objective:	4. Targeted screening for active TB					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I4.1.1. #/% of eligible index patients of TB for which contact investigations were undertaken	Gender, Urban, Rural	Quarterly	Baseline data 2014 collected from NTP in Q4-APA1(which is not yet available)	20% increase of baseline	Data not available	This activity, based on the revised WHO guideline and implementation manual, is being piloted in one of the high burden TB districts (Ghanzi district). CTB has been providing technical support to NTP to develop some tools that are necessary in the implementation of contact investigation (namely index case interview and chart review form, and TB contact investigation form). The piloting will continue until April 2016. The result would be shared Quarter 3 if available.

Sub-objective:	8. Comprehensive partnerships and informed community involvement					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I8.2.2. Status of Global Fund implementation (0=no preconditions have been met; 1=national strategic plan developed/updated ; 2=concept note submitted; 3=concept note is funded)		Annually	2	3	Measured annually	

Sub-objective:	9. Drug and commodity management systems					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I9.2.1. # of new and ancillary drug regimens that have become available in country since the start of Challenge TB	Drug/ regimen	Annually		Current Regimens do not include BDQ	Measured annually	Only 4 patients in 2014 and 2015 were initiated on Bedaquiline on compassionate use. It is not formally introduced into the program yet.

Sub-objective:	10. Quality data, surveillance and M&E					
Performance indicator	**Disaggregated by**	**Frequency of collection**	**Baseline (timeframe)**	**End of year target**	**Results to date**	**Comments**
I10.1.4. Status of electronic R&R (0=paper-based R&R; 1=e-reporting to nat. level, no patient/case-based or real time; 2= pt./case-based ERR system in select sites (TB or MDR); 3= pt./case-based, real-time ERR system at national & sub-national levels, TB & MDR)	Urban, Rural	Annually	1	2	Measured annually	The country uses electronic TB Register (ETR) for drug susceptible TB from district to the national level. Open MRS (which is patient based) is used at the 5 MDR-TB treatment centres for MDR-TB data management.
10.2.2. Prevalence survey conducted/completed in the last three years	Urban, Rural, Age	Annually	No baseline available	Preparations for survey started. Protocol updated	Measured annually	